

DRAFT

**Environmental Impact Statement
Continental Divide-Creston
Natural Gas Development Project**

Volume I

November 2012

Wyoming High Desert District - Rawlins Field Office



The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

BLM/WY/PL-13/002+1310

Draft Environmental Impact Statement (EIS)
BP-America Production Company and 20 Other Operators
Continental Divide-Creston Natural Gas Development Project

Lead agency:	U.S. Department of the Interior, Bureau of Land Management (BLM)
Project location:	Carbon and Sweetwater Counties, Wyoming
Comments & further information on the Draft EIS:	David Simons, Team Lead Bureau of Land Management, Rawlins Field Office 1300 North Third Street Rawlins, WY 82301-2407 Phone: (307) 328-4200
BLM Authorized Officer responsible for preparing the Draft EIS:	Dennis Carpenter, Field Office Manager

Abstract

The Operators propose to develop oil and gas resources within the 1.1 million-acre Continental Divide-Creston (CD-C) project area located in Carbon and Sweetwater Counties west of Rawlins, Wyoming. The CD-C project is an in-fill project with over 4,400 existing oil and gas wells and associated infrastructure. The Proposed Action would include the development of an additional 8,950 gas wells at down to 40-acre downhole spacing. Construction would begin after the issuance of the Final EIS and Record of Decision and approval of individual Applications for Permit to Drill and/or approved right-of-way grants. Construction would require approximately 15 years. The productive life of the project would extend an estimated 30 to 40 years beyond that.

The Proposed Action and five alternatives were analyzed in detail in this Draft EIS. The alternatives are:

- The Proposed Action;
- Alternative A, 100-Percent Vertical Drilling;
- Alternative B, Enhanced Resource Protection;
- Alternative C, Surface Disturbance Cap—High and Low Density Development Areas;
- Alternative D, Directional Drilling; and
- Alternative E, No Action.

Under all the action alternatives, the analysis includes impacts produced by development activities on federal, state, and private mineral estate. In addition to the applicable BLM environmental protection measures listed in Appendix C of the EIS document, mitigation is recommended that would lessen the environmental effects of the proposed project.

Written comments on the Draft EIS will be accepted by the Rawlins Field Office of the BLM throughout a 45-day public comment period beginning on the date the United States Environmental Protection Agency publishes a Notice of Availability for this EIS. A summary of the comments and responses to the comments will be provided in the Final EIS.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
High Desert District
Rawlins Field Office
P.O. Box 2407 (1300 North Third Street)
Rawlins, WY 82301-2407



In reply refer to: 3160 (WYD03)

Dear Reader:

The Draft Environmental Impact Statement (EIS) for the Continental Divide-Creston Natural Gas Development Project is available for your review and comment. It was prepared to analyze the potential impacts of a proposal from BP America Production Company and others for natural gas field development. The Continental Divide-Creston (CD-C) project area encompasses approximately 1.1 million acres (1,672 square miles) in an existing gas-producing area located west of Rawlins, Wyoming in Carbon and Sweetwater Counties.

The CD-C project is an in-fill project with over 4,400 existing oil and gas wells. The Proposed Action includes the development of an additional 8,950 gas wells, including construction of supporting infrastructure—access roads, pipelines, electrical power lines, a central gas-processing plant, and water management and disposal facilities. Construction would begin after the issuance of the Final EIS and Record of Decision and approval of individual Applications for Permit to Drill and/or approved right-of-way grants. Construction would require approximately 15 years. The productive life of the project would extend an estimated 30 to 40 years beyond that, for a combined total project life of 45 to 55 years.

This Draft EIS analyzes the Proposed Action and the following five alternatives in detail:

- Alternative A, 100-Percent Vertical Drilling;
- Alternative B, Enhanced Resource Protection;
- Alternative C, Surface Disturbance Cap—High and Low Density Development Areas;
- Alternative D, Directional Drilling; and
- Alternative E, No Action.

Total new surface disturbance under the Proposed Action would be approximately 47,200 acres, or 4.4 percent of the CD-C project area.

The Draft EIS was prepared pursuant to the National Environmental Policy Act (NEPA), as well as other regulations and statutes, to address possible environmental and socioeconomic impacts that could result from implementation of the project. The Draft EIS is not a decision document. Its purpose is to inform the public and the decision maker of the impacts associated with implementing the proponent's proposal, to evaluate alternatives to the proposal, and to solicit comments from other agencies and the public. Comments are being sought to ensure that the EIS includes an appropriate range of alternatives to the Proposed Action and that the analysis of environmental effect is appropriate and complete.

The CD-C Draft EIS is available for download on the following website:

http://www.blm.gov/wy/st/en/info/NEPA/documents/rfo_html

The Draft EIS is also available for review during normal business hours at the following locations:

- BLM Wyoming State Office, 5353 Yellowstone Road, Cheyenne, Wyoming
- BLM High Desert District Office, 280 Highway 191 North, Rock Springs, Wyoming
- BLM Rawlins Field Office, 1300 North Third Street, Rawlins, Wyoming
- Carbon County Library, 215 West Buffalo Street, Rawlins, Wyoming

If you wish to submit comments, we request that you make them as specific as possible, with references to page numbers and chapters of the document. The most useful comments will contain new technical or scientific information, identify data gaps in the impact analysis, and/or provide technical or scientific rationale for opinions or preferences. Please refer to “Continental Divide-Creston EIS” in your correspondence. Written comments will be accepted by fax, email, or letter for 45 days following the publication of the Notice of Availability in the Federal Register by the U.S. Environmental Protection Agency. Please provide your comments to:

Bureau of Land Management
Attn: David Simons
Rawlins Field Office
P.O. Box 2407 (1300 North Third Street)
Rawlins, WY 82301-2407
Fax: 307-328-4224
Email: BLM_WY_Continental_Divide_Creston@blm.gov

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. The BLM will not consider anonymous comments. Comments may be published as part of the NEPA document and other related documents. All submissions from organizations or businesses will be made available for public inspection in their entirety. For further information concerning the document, please contact David Simons at (307) 328-4328.

Sincerely,

Dennis J. Carpenter
Rawlins Field Office Manager

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
µeq/l	microequivalents per liter
µg/L	micrograms per liter
µg/m ³	micrograms per cubic meter
µmhos/cm	micromhos per centimeter
AADT	annual average daily traffic
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ac-ft	acre-feet
AML	appropriate management level
ANC	acid neutralizing capacity
AO	Authorized Officer
APD	Application for Permit to Drill
AQTSD	Air Quality Technical Support Document
APE	area of potential effect
AQRV	Air Quality Related Values
AR4	IPCC (Intergovernmental Panel on Climate Change) Fourth Assessment Report
ATT	<i>Artemisia tridentata</i> ssp. <i>tridentata</i> (basin big sagebrush)
ATVP	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i> and <i>Artemisia tridentata</i> ssp. <i>pauciflora</i> (mountain big sagebrush)
ATW	<i>Artemisia tridentata</i> ssp. <i>Wyomingensis</i> (Wyoming big sagebrush)
AUE	animal unit equivalent
AUM	animal unit month
BA	Biological Assessment
BACT	Best Available Control Technology
bbl	barrel
Bcf	billion cubic feet
BCLLC	Blankenship Consulting LLC
BLM	Bureau of Land Management
BMP	Best management practice
BP	BP America Corporation
B.P.	before present
BSC	biological soil crust
CAAQS	Colorado Ambient Air Quality Standards
CaCO ₃	calcium carbonate
CAMx	Comprehensive <u>Air quality Model with Extensions</u>
CASTNET	Clean Air Status and Trends Network
CBG	Creston Blue Gap
CBM	Coalbed methane
CBNG	coalbed natural gas
CCLUP	Carbon County Land Use Plan
CCR	Carbon County Road
CCRBD	Carbon County Road and Bridge Department
CCSD	Carbon County School District
CCVC	Carbon County Visitors Council

ACRONYMS AND ABBREVIATIONS

CDA	Concentrated Development Area
CD-C	Continental Divide-Creston
CDW2	Continental Divide/Wamsutter II
CEM	continuous emissions monitoring
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH ₄	methane
CIAA	cumulative impact analysis area
CO	carbon monoxide
COA	condition of approval
CRBSCF	Colorado River Basin Salinity Control Forum
CRM	Coordinated Resource Management
CSU	controlled surface use
CTL	coal to liquid
CWA	Clean Water Act
CWRRI	Colorado Water Resources Research Institute
CWR	crucial winter range
CW/Y	crucial winter/yearlong
dBA	decibel
DEIS	Draft Environmental Impact Statement
DAT	deposition analysis threshold
DIR	dividends, interest, and rent
DM	Department Manual
DOI	Department of the Interior
dv	deciview
Δdv	delta deciview
EA	Environmental Assessment
EGU	electrical generating unit
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency (United States Environmental Protection Agency)
ERP	Enhanced Resource Protection Alternative
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act of 1973
FDOP	first date of production
FLAG	Federal Land Managers' Air Quality Related Values Work Group
FEIS	Final Environmental Impact Statement
FLM	Federal Land Managers
FLPMA	Federal Land Policy and Management Act of 1976
FMR	federal mineral royalties
ft	feet
FY	fiscal year
GHG	greenhouse gas
GIS	geographic information system
gpm	gallons per minute
GPS	Global Positioning System

ACRONYMS AND ABBREVIATIONS

GDRMP	Great Divide Resource Management Plan
GWP	Global Warming Potential
HAP	Hazardous Air Pollutants
HMRRP	Hazard Management and Resource Restoration Program
HMA	herd management area
HNO ₃	nitric acid
HUC	hydrologic unit code
HWA	Hayden-Wing Associates, LLC
I-80	Interstate 80
IDLH	Immediately Dangerous to Life or Health
IDT	interdisciplinary team
IM	Instruction Memorandum
IMPROVE	Interagency Monitoring of PROtected Visual Environments
IN	Initial (as in <i>initial disturbance</i>)
IPCC	Intergovernmental Panel on Climate Change
IRO	Interim rollover objective
ISR	in situ uranium recovery
ISWM	Integrated Solid Waste Management
JPAD	Jonah-Pinedale Anticline Development
kg/ha-yr	kilograms per hectare per year
KMDA	known mineral deposit area
lb	pound(s)
kHz	kilohertz
KOP	Key Observation Point
LOS	level of service
LSRCD	Little Snake River Conservation District
LSRV	Little Snake River Valley
LT	Long-term (as in <i>long-term disturbance</i>)
LWC	Lands with Wilderness Characteristics
LWDII	lost work day [due to] injuries and illness
m ³	cubic meters
MATS	Modeled Attainment Test Software
McF	thousand cubic feet
MEI	maximally-exposed-individual
mg/L	milligrams per liter
MGD	million gallons per day
mi ²	Square mile
MLE	most-likely-exposure
MMBtu	gigajoules
MMcf	million cubic feet
MHSC	Memorial Hospital of Sweetwater County
MHCC	Memorial Hospital of Carbon County
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mph	miles per hour
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NADP	National Acid Deposition Program

ACRONYMS AND ABBREVIATIONS

NASS	National Agricultural Statistics Service
NEPA	National Environmental Policy Act
NH ₄	ammonium
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NO ₂	nitrogen dioxide
NO ₃	nitrate
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRC	Nuclear Regulatory Commission
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NSO	No surface occupancy
NSPS	New Source Performance Standards
NSR	New Source Review
NTL	Notice to Lessee
NTN	National Trends Network
NTU	nephelometric turbidity unit
NWI	National Wetland Inventory
OHV	off-highway vehicle
OPS	Office of Pipeline Safety
OSHA	Occupational Safety and Health Administration
OSM	Office of Surface Mining Reclamation and Enforcement
OWUS	Other Waters of the U.S.
ppb	parts per billion
PCT	personal current transfers
PFC	Proper Functioning Condition
PFYC	Probable Fossil Yield Classification
PGM	photochemical grid model
PM ₁₀	particulate matter less than 10 microns
PM _{2.5}	particulate matter less than 2.5 microns
PRPA	Paleontological Resources Preservation Act
PSD	prevention of significant deterioration
psi	pound per square inch
PUP	Pesticide Use Proposal
PWMTF	Permanent Wyoming Mineral Trust Fund
RCRA	Resource Conservation and Recovery Act
REL	Reference Exposure Levels
RfC	Reference Concentrations for Chronic Inhalation
RFFA	Reasonably Foreseeable Future Action
RFO	Rawlins Field Office
RIP	Recovery and Implementation Plan
RMG	Reservoir Management Group
RMP	Resource Management Plan
RMPPA	Resource Management Plan Project Area
ROD	Record of Decision
RV	recreational vehicle
SCCP	Sweetwater County Land Use Plan

ACRONYMS AND ABBREVIATIONS

SCR	Sweetwater County Road
SCRBD	Sweetwater County Road and Bridge Department
SCSD	Sweetwater County School District
scf	standard cubic feet
SCSWDD	Sweetwater County Solid Waste Disposal District
SDLLC	Sammons/Dutton Consulting LLC
SDWA	Safe Drinking Water Act
SEO	State Engineer's Office
SGEO	Greater Sage-grouse Core Area Protection Program
SHPO	State Historic Preservation Office
SHWD	Solid and Hazardous Waste Disposal
SO ₂	sulfur dioxide
SO ₄	sulfate
SPCC	Spill Prevention Control and Countermeasures
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
SSA	sole source aquifer
STR	Continental Divide-Creston Natural Gas Development Project Socioeconomic Technical Report
SVR	standard visual range
SWEDA	Sweetwater Economic Development Authority
SWPPP	Stormwater Pollution Prevention Plan
SWR	severe winter relief areas
Tcf	trillion cubic feet
TDS	total dissolved solids
tg	teragrams
T&E	Threatened, Endangered, or Candidate
TNW	Traditionally Navigable Water
TP	Transportation Plan
TPC	Transportation Planning Committee
TPQ	threshold planning quantity
tpy	tons per year
TRC	Texas Resource Consultants
UGMA	Upland Game Management Area
UIC	Underground Injection Control
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USDOT	United States Department of Transportation
USDW	Underground Sources of Drinking Water
USFS	USDA—Forest Service
USGS	United States Geological Survey
USFWS	United States Fish & Wildlife Service
UW	University of Wyoming
VIEWS	Visibility Information Exchange Web System
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WAAQS	Wyoming Ambient Air Quality Standards

ACRONYMS AND ABBREVIATIONS

WAQSR	Wyoming Air Quality Standards and Regulations
WAS	Western Archaeological Services
WDA	Wyoming Department of Agriculture
WDEQ	Wyoming Department of Environmental Quality
WDEQ-AQD	Wyoming Department of Environmental Quality—Air Quality Division
WDEQ-LQD	Wyoming Department of Environmental Quality—Land Quality Division
WDEQ-WQD	Wyoming Department of Environmental Quality—Water Quality Division
WEAD	Wyoming Department of Administration and Information, Economic Analysis Division
WET	Whole Effluent Toxicity
WGFD	Wyoming Game and Fish Department
WHDP	Wyoming Housing Database Partnership
WHMA	Wildlife Habitat Management Area
WOGCC	Wyoming Oil and Gas Conservation Commission
WOS	Wildlife Observation System
WOSHA	Wyoming Occupational Safety & Health Administration
WoUS	Waters of the U.S.
WRAP	Western Regional Air Partnership
WRCC	Western Regional Climate Center
WRDS	Water Resource Data Center
WRS	Wyoming Revised Statutes
WSA	Wilderness Study Area
WY	Wyoming State Highway
WYDOT	Wyoming Department of Transportation
WYNDD	Wyoming Natural Diversity Database
WYPDES	Wyoming Pollutant Discharge Elimination System